

Notice of Allowability

Application No.

10/629,049

Examiner

Fahmida Rahman

Applicant(s)

CHOI ET AL.

Art Unit

2116

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/22/07.
2. ☒ The allowed claim(s) is/are 5-10 and 12.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Joseph Makuch on 2/7/07.

In the Claims:

1. Claim 5, line 33: change "the compute system" with --the computer system-- after the words "an operation to boot".
2. Rewrite claim 7 as follows to overcome dependency on canceled claim 1:
 7. (Currently amended) A computer system comprising:
a system controller including a central processing unit and a memory bus controller and configured to operate in a first interface mode;
a system memory connected with the system controller through the system bus;
a NAND flash memory configured to store a system driving code, an operating system program, and user data for the computer system; and
an interface unit configured to communicate with the system controller through the system bus in the first interface mode and configured to communicate with the NAND flash memory in a second interface mode, the interface unit being

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synchronized with a clock signal generated in response to predetermined command information;

wherein the interface unit comprises:

- a first interface unit configured to communicate with the system controller through the system bus in the first interface mode;

- a second interface unit synchronized with the clock signal and configured to communicate with the NAND flash memory in the second interface mode;

- a storage unit configured to store information and data exchanged between the first and second interface units; and

- a control unit synchronized with the clock signal and configured to control a transmission of the information and data between the first and second interface units;

wherein the control unit comprises:

a first block configured to control operations to program the data stored in a buffer unit and predefined error correcting parity bits in the NAND flash memory;

a second block configured to control an operation to store the data read out of the NAND flash memory in the buffer unit;

a third block configured to control an operation to boot the computer system by using the system bootstrap code stored in the NAND flash memory; and

a fourth block configured to control an operation to generate the error correcting parity bits during the programming operation of the NAND flash memory and configured to control an operation to correct an error by comparing the parity bits stored in the NAND flash memory with new parity bits during the read operation of the NAND flash memory.

3. Claim 8, line 4: Change "a buffer unit" with --the buffer unit-- before the words "configured to store".

In the Specification:

4. Page 4, line 16: delete --(14 in FIG. 4)-- after the words "conventional NAND flash controller".
5. Page 5, line 23: add --DI03-- after the words "data signals".

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6. Page 7, line 16: change "new" with --nWE— after the words "a write enable signal".
7. Page 9, line 30: change "(e.g., page N)" with --(e.g., page N, N+1, N+2)— after the words "respective pages".
8. Page 9, line 30: change "RCAn" with --(e.g., RCAn, RCAn+1, RCAn+2)— after the words "consists of a period".
9. Page 9, line 31: change "LATn" with --(e.g., LATn, LATn+1, LATn+2)— after the words "a period".
10. Page 9, line 32: change "Rn" with --(e.g., Rn, Rn+1, Rn+2)— after the words "a period".
11. Page 11, line 3: change "(e.g., the second page)" with --(e.g., PCAn+2, Ln+2, Pn+2)— after the words "the next page".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fahmida Rahman whose telephone number is 571-272-8159. The examiner can normally be reached on Monday through Friday 8:30 - 5:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached on 571-272-3676. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

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applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fahmida Rahman
Examiner
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REHANA PERVEEN
SUPERVISORY PATENT EXAMINER
2/8/07